

SCHEMATIC & WIRING DIAGRAM SYMBOLS

- WIRING BY VENDOR
 - CALLOUT LEADER
 - WIRING BY FIELD
 - MECHANICAL INTERLOCK, EXISTING, OR FUTURE AS INDICATED
 - WIRING BY OTHERS - IDENTITY OF OTHERS SHALL BE SHOWN EACH TIME THIS SYMBOL IS USED
 - ENCLOSURE BOUNDARY
 - CROSSING OF CONDUCTORS, NOT CONNECTED
 - CONNECTION OF CONDUCTORS
 - BREAK IN LINE FOR DRAFTING CLARITY
 - CONDUCTORS WITH SHIELD, SHOWN WITH CRIMP LUG INSULATED FROM GROUND
 - GROUND
 - GROUPING OF CONDUCTORS, NUMBERS INDICATE WIRE OR TERMINAL DESIGNATION.
 - CONTACT, NORMALLY OPEN (N.O.), FORM 'A' CONTACT. CLOSURES WHEN COIL IS ENERGIZED. IDENTIFICATION SAME AS ELECTRICAL DEVICE IN PLAN SYMBOLS
 - CONTACT, NORMALLY CLOSED (N.C.), FORM 'B' CONTACT OPENS WHEN COIL IS ENERGIZED
 - O.L. = OVERLOAD RELAY CONTACTS
G.R. = GROUND RELAY CONTACTS
 - SEPARABLE OR DRAWOUT TYPE CONNECTOR
 - EQUIPMENT TERMINAL AND/OR SWITCH CONTACT
 - FIELD CONNECTION TO EQUIPMENT TERMINAL
 - TERMINATION IN HVAC RELAY BOX
 - WIRE CONNECTION, CRIMP TYPE
 - TERMINAL OR TERMINAL BOX IN MCC OR SWITCHGEAR
 - TERMINAL IN RELAY PANEL
 - TERMINAL IN FIELD TERMINAL BOX
 - TERMINAL IN MARSHALLING BOX
 - TERMINAL IN CONTROL PANEL
 - PLC INPUT TERMINAL
 - PLC OUTPUT TERMINAL
 - TERMINAL IN PACKAGED EQUIPMENT
- RELAY COIL :**
- AK = AUXILIARY RELAY
 - CR = CONTROL RELAY
 - IP = INTERLOCKING RELAY
 - C = CONTACTOR
 - M = MOTOR STARTER
 - GR = GROUND RELAY
 - IC = INSTANTANEOUS CLOSE
 - IO = INSTANTANEOUS OPEN
 - SR = REDUCED VOLTAGE STARTING RELAY
 - TE = TIME DELAY ON ENERGIZATION
 - TD = TIME DELAY ON DEENERGIZATION
 - UV = UNDER VOLTAGE
 - N = NUMBER OF CONTACTS
- LIGHTS :**
- A = AMBER LIGHT
 - B = BLUE LIGHT
 - C = CLEAR LIGHT
 - W = WHITE LIGHT
 - O = ORANGE LIGHT
 - G = GREEN LIGHT
 - SW = SWITCH OR CONTACT OPEN, PROCESS ON/VALVE OPEN
 - R = RED LIGHT
 - SC = SWITCH OR CONTACT CLOSED, PROCESS OFF/VALVE CLOSED

SCHEMATIC & WIRING DIAGRAM SYMBOLS

- METERS :
 - A = AMMETER
 - F = FREQUENCY METER
 - D = DEMAND ATTACHMENT
 - ET = ELAPSED TIME
 - G = GROUND DETECTOR
 - O = OHM METER
 - K = KILO PREFIX
 - M = MEGA PREFIX
 - PF = POWER FACTOR METER
 - PH = PHASE ANGLE METER
 - PI = POSITION INDICATOR
 - R = RECORDING METER
 - SY = SYNCHROSCOPE
 - TZ = TOTALIZING
 - TT = TOTAL TIME
 - V = VOLTS METER
 - VAR = VOLT AMPS REACTIVE
 - W = WATT
 - WH = WATT HOUR
 - PH = PHASE ANGLE METER
- DEVICE AS IDENTIFIED ON PROCESS DIAGRAM HIGH-HIGH LEVEL SWITCH NO. 27 SHOWN
- PUSHBUTTON, NORMALLY OPEN, SINGLE POLE, SINGLE THROW (SPST), MOMENTARY CLOSED
- PUSHBUTTON, NORMALLY CLOSED, SINGLE POLE, SINGLE THROW (SPST), MOMENTARY OPEN
- SWITCH, MULTIPLE POLE, MULTIPLE THROW
- H = HAND
 - O = OFF
 - A = AUTO
 - R = REMOTE DEVELOPMENT CONTACT MAKE
 - B = REMOTE
 - L = LOCAL
- TWO-SINGLE CIRCUIT, PUSHBUTTON STATION, SINGLE POLE, SINGLE THROW (SPST), MAINTAINED CONTACT
- SWITCH, SINGLE POLE, SINGLE THROW (SPST), THE SWITCH LEADS SHALL BE SHOWN ON THE MAINTAINED CONTACT LOAD SIDE (TYPICAL)
- SWITCH, SINGLE POLE, DOUBLE THROW (SPDT) MAINTAINED CONTACT
- TRANSFER CONTACTS (ALTERNATE TO SPDT)
- ROPE SWITCH, (EMERGENCY STOP)
- LIMIT SWITCH, NORMALLY OPEN (N.O.)
- LIMIT SWITCH, NORMALLY CLOSED (N.C.)
- LEVEL SWITCH - OPENS ON LOW LEVEL, CLOSURES ON RISING LEVEL, NORMALLY OPEN (N.O.)
- LEVEL SWITCH - OPENS ON RISING LEVEL, CLOSURES ON LOW LEVEL, NORMALLY CLOSED (N.C.)
- PRESSURE SWITCH, FORM 'C' CONTACTS, TOP NORMALLY OPEN (N.O.), BOTTOM NORMALLY CLOSED (N.C.)
- PRESSURE SWITCH, OPENS ON HIGH PRESSURE, CLOSURES ON LOW PRESSURE, NORMALLY CLOSED (N.C.)
- TEMPERATURE SWITCH, OPENS ON LOW TEMPERATURE, CLOSURES ON RISING TEMPERATURE, NORMALLY OPEN (N.O.)
- TEMPERATURE SWITCH, OPENS ON RISING TEMPERATURE, CLOSURES ON LOW TEMPERATURE, NORMALLY CLOSED (N.C.)
- VIBRATION SWITCH, OPENS ON VIBRATION, NORMALLY CLOSED (N.C.)
- FLOW SWITCH, OPENS ON DECREASING FLOW, CLOSURES ON INCREASING FLOW, NORMALLY OPEN (N.O.)
- FLOW SWITCH, OPENS ON INCREASING FLOW, CLOSURES ON DECREASING FLOW, NORMALLY CLOSED (N.C.)
- ON DELAY RELAY CONTACT, NORMALLY OPEN, CLOSURES AFTER TIME DELAY (TDC)
- ON DELAY RELAY CONTACT, NORMALLY CLOSED, OPENS AFTER TIME DELAY (TDO)
- OFF DELAY RELAY CONTACT NORMALLY OPEN (N.O.) INSTANTANEOUS CLOSURE, OPENS AFTER TIME DELAY (TDO)
- OFF DELAY RELAY CONTACT NORMALLY CLOSED (N.C.) INSTANTANEOUS OPEN, CLOSURES AFTER TIME DELAY (TDC)

SCHEMATIC & WIRING DIAGRAM SYMBOLS

- ANNUNCIATOR HORN, S-SPEAKER
- BELL
- BUZZER
- SOLENOID OPERATED VALVE, IDC COIL REVERSE POLARITY (DOVE)
- THERMOCOUPLE
- DIODE
- THYRISTOR
- IN LINE CONDUCTOR CURRENT LIMITING CABLE PROTECTOR
- LIGHTNING OR SURGE ARRESTOR
- PROTECTIVE GAP
- BATTERY
- RESISTOR
R1, 2, 3... = RESISTOR NUMBER
- ADJUSTABLE OR VARIABLE FUNCTION
- CARTRIDGE FUSE
A = ALARM CONTACT
CL = CURRENT LIMITING
I = INDICATING
- CAPACITOR, C1, 2, 3... = CAPACITOR NUMBER
- FUSIBLE LINK
- CIRCUIT BREAKER, MOLDED CASE
- INDUCTOR
- CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE PLUS VOLT AMPERES SHALL BE SHOWN
480V 50 VA
120V
- IDENTIFIED EQUIPMENT
- TERMINAL BLOCK (TB)
A, B, C...ETC = SEQUENTIAL IDENTIFIER
1, 2, 3...ETC = TERMINAL NUMBER
- IDENTIFIES CONTROL DEVICE TO BE LOCATED IN FIELD OR ADJACENT TO MOTOR, LOCATED ON CONTROL BOARD
- PURCHASED BY INSTRUMENT SPECIFICATION OR REQUISITION
- FURNISHED WITH MECHANICAL EQUIPMENT

MOTOR CONTROL CABLE CONDUCTOR COLOR CODE

CODE	COLOR	CONDUCTOR NO.
R	RED	1
O	ORANGE	2
W	WHITE	3
B	BLUE	4
Y	YELLOW	5
BLK	BLACK	6
BRN	BROWN	7
R/BK	RED/BLACK	8
BR/BK	BLUE/BLACK	9
GR	GREEN	GROUND OR (-)

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PARSONS
 100 WEST WALNUT STREET
 PASADENA, CALIFORNIA

LIGO
 CALIFORNIA INSTITUTE OF TECHNOLOGY
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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